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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

COLUMBIA ALUMINUM RECYCLING, LTD.
(FORMERLY COLUMBIA TOOL STEEL COMPANY)
CHICAGO HEIGHTS, ILLINOIS
ILD 005 144 233

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No. : R05032

EPA Region : 5

 Site No.
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 ILD 005 144 233

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PRC No. : 309-R05032-IL42

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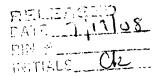
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EXECUTIVE SUMMARY

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Resource Applications, Inc. (RAI) performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) at the Columbia Aluminum Recycling, Ltd. (Columbia Aluminum) facility in Chicago Heights, Illinois. No areas of concern (AOC) were identified at Columbia Aluminum. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs identified.

The Columbia Aluminum facility, a subsidiary of Metal Mark Inc., is an aluminum dross processor. The facility currently generates and manages the following waste streams: nonhazardous baghouse dust and nonhazardous slag. Columbia Aluminum has been in operation at its current location since 1991. The Columbia Aluminum facility occupies 8.45 acres in a commercial, industrial, and residential mixed-use area and employs 45 people. The facility is currently not regulated.

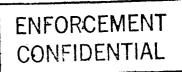
Columbia Aluminum acquired the facility in 1989 after the previous owner, Columbia Tool Steel Company (Columbia Tool), went out of business in 1987. Columbia Tool began manufacturing tool steel bar products and castings in 1973. In 1984, the Baghouse Dust Agglomerator (SWMU 1) was RCRA closed. In 1987, operations at the Columbia Tool facility were discontinued. Columbia Tool's original regulatory status was that of a small-quantity generator of hazardous waste, and a hazardous waste treatment, storage, or disposal (TSD) facility. In 1984 Columbia Tool's regulatory status changed to that of a small-quantity generator of hazardous waste when the Baghouse Dust Agglomerator (SWMU 1) was RCRA closed, delisting Columbia Tool as a TSD facility. During the time Columbia Tool was in operation, the facility had minor compliance problems which were satisfactorily resolved. SWMU 1 had no history of documented releases under Columbia Tool's tenure. Information on land use at the facility property prior to 1973 was not available.

The PA/VSI identified the following SWMU at the facility:

Solid Waste Management Unit

Baghouse Dust Agglomerator





The potential for release to ground water, surface water, air, and on-site soils is low. The current SWMU 1 has no history of releases and the nonhazardous dust is managed properly.

The facility is bordered on the north, east, and south by commercial and industrial businesses, and on the west by a railroad right-of-way and a light commercial and residential mixed area. The nearest school, St. Joseph's Elementary, is located about 0.75 mile west of the facility. Facility access is controlled by continuous 15-foot barbed-wire fencing, and a guard house located at the entrance gate.

The nearest surface water body, Third Creek, is located 0.5 mile northeast of the facility and is used for drainage purposes. Drinking water is obtained from the municipal water supply system which draws from Lake Michigan. Ground water is not used as a private water supply. There are no drinking water wells in the vicinity of the facility.

Sensitive environments are located in the immediate vicinity of the facility. The facility is surrounded by municipal forest preserves approximately 1.5 miles to the north, west, and southwest.

RAI recommends no further action for the facility at this time.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. Resource Applications, Inc. (RAI), TES 9 team member, provided the necessary assistance to complete the PA/VSI activities for the Columbia Aluminum Recycling, Ltd. (Columbia Aluminum) facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has
 usually exempted from standards applicable to hazardous waste management
 units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Columbia Aluminum facility (formerly Columbia Tool Steel Company, EPA Identification No. ILD 005 144 233) in Chicago Heights, Cook County, Illinois. The PA was completed on June 12, 1992. RAI gathered and reviewed information from the Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. RAI also reviewed publications from the National Oceanic and Atmospheric Administration (NOAA), Illinois State Geological Survey (ISGS), U.S. Department of Agriculture (USDA), U.S. Department of Commerce (USDC), Federal Emergency Management Agency (FEMA), Illinois Department of Commerce and Community Affairs, Illinois State Water Survey Division, and the U.S. Geological Survey (USGS). The VSI was conducted on June 15, 1992. It included interviews with a facility representative and a walk-through inspection of the facility. RAI identified one SWMU and no AOCs at the facility.

The VSI is summarized and one inspection photograph is included in Attachment A. Field notes from the VSI are included in Attachment B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history, environmental setting; and receptors.

2.1 FACILITY LOCATION

The Columbia Aluminum facility is located at 400 E. Lincoln Highway in Chicago Heights, Cook County, Illinois. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 41°30"22' N and longitude 87°36"58' W). The facility occupies 8.45 acres in a mixed-use area.

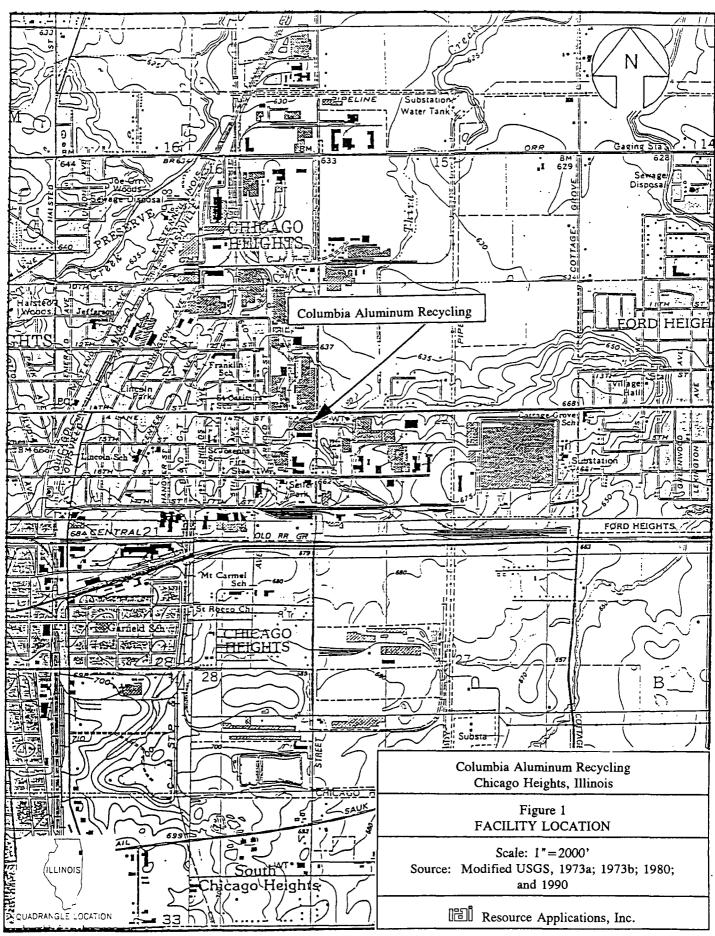
The facility is bordered on the north, east, and south by commercial and industrial businesses, and on the west by a railroad right-of-way and a light commercial and residential mixed area.

2.2 FACILITY OPERATIONS

Columbia Aluminum currently operates as an aluminum dross processing facility. Aluminum is reclaimed primarily from skimmings and large reverberation operations, as well as from aluminum die casting operations. No hazardous wastes and two nonhazardous wastes, baghouse dust and slag, are generated at the facility and are transported to landfills for disposal. The baghouse dust is disposed of two to three times per week, and the slag is disposed of daily.

Solid wastes generated from facility operations and the SWMU where they are managed are discussed in detail in Section 2.3.

Columbia Aluminum has operated the facility since 1991 and employs 45 people working in a three-shift schedule, 24 hours per day. The 8.45-acre site consists of buildings taken over from Columbia Tool Steel Company (Columbia Tool). The 50,000-square-foot main building houses the plant manager's office and two operational furnaces. Other buildings totalling approximately 45,000



square feet are used for storage and other offices. A parking lot is located at the guardhouse entrance in the southwest section of the site.

Operations at the site began in 1973 under Columbia Tool, a tool steel bar products and castings manufacturer. Columbia Tool generated a hazardous, high-chromium content baghouse dust (K061) from the production of steel in electric furnaces. The hazardous dust was stored in 7- to 10-cubic-yard roll-off boxes for greater than 90 days. In 1987, Columbia Tool declared bankruptcy. The site was purchased by Metal Mark, Inc. and its subsidiary, Columbia Aluminum, began operations in 1991. No information on land use prior to 1973 at the site was available.

2.3 WASTE GENERATION AND MANAGEMENT

The primary waste streams generated since 1991 at the Columbia Aluminum facility include nonhazardous baghouse dust and nonhazardous slag. Both the baghouse dust and slag are generated in the main building during the smelting process. The baghouse dust is managed in the Baghouse Dust Agglomerator (SWMU 1) and is blown directly into covered 7- to 10-cubic-yard roll-off boxes through flexible tubing, preventing handling and release of the waste. The baghouse dust is picked up two to three times a week by Sexton Contractors of Chicago Heights, Illinois, and transported to CID Landfill in Calumet City, Illinois. The slag is picked up once a day (or more frequently) at the point of generation, adjacent to the smelting furnaces, by P&H Trucking of South Holland, Illinois, and transported to Land and Lakes landfill of Chicago, Illinois (Columbia Aluminum, 1992b).

The facility was inactive from 1987 to 1991. From 1973 to 1987 the site was occupied by Columbia Tool. Columbia Tool generated a hazardous, high-chromium content baghouse dust (K061) during steel production in electric furnaces. Columbia Tool used the same Baghouse Dust Agglomerator (SWMU 1) that is currently operating at Columbia Aluminum. In 1984, in order to delist Columbia Tool as a hazardous waste storage facility, the Baghouse Dust Agglomerator (SWMU 1) was RCRA closed. The hazardous baghouse dust was no longer stored on site for more than 90 days. Columbia Tool's hazardous baghouse dust was managed in a similar manner as the current nonhazardous dust, with the exception that the hazardous baghouse dust was disposed of less frequently. Browning Ferris Industries transported the hazardous baghouse dust to a landfill in Zion, Illinois until Columbia Tool was permanently shut down.

Columbia Tool's and Columbia Aluminum's SWMU is identified in Table 1. Columbia Aluminum's layout, including the SWMU location, is shown in Figure 2. Columbia Tool's and Columbia Aluminum's waste streams are summarized in Table 2.

2.4 HISTORY OF DOCUMENTED RELEASES

There is no history of documented releases to ground water, surface water, air, or on-site soils at this facility.

2.5 REGULATORY HISTORY

Columbia Tool submitted a Notification of Hazardous Waste Activity form to EPA on August 13, 1980 (Columbia Tool, 1980a). The facility submitted a RCRA Part A permit application on November 11, 1980 as a small-quantity generator and treatment, storage, or disposal (TSD) facility (Columbia Tool, 1980b). This application listed the following process code and capacity: S01 (5,858 gallons). The application listed the following waste: K061, with an estimated annual generation rate of 42 tons. The S01 code refers to the Baghouse Dust Agglomerator, SWMU 1, which was RCRA closed in 1984. A closure plan submitted to IEPA by Columbia Tool on April 3, 1984 was rejected on May 11, 1984 (IEPA, 1984a). The revised closure plan submitted on June 21, 1984 was approved on August 23, 1984 (IEPA, 1984b). On April 3, 1985, IEPA acknowledged receipt of closure certification and approved the closure (IEPA, 1985). Columbia Tool was then classified as a small-quantity generator of hazardous waste only. Minor RCRA compliance problems were observed at Columbia Tool during three inspections conducted by IEPA in 1982, 1986, and 1987 pertaining to the closure plan for the facility, contingency plan and training records (IEPA, 1982; 1986; 1987). All violations were resolved satisfactorily and no orders were issued.

Columbia Aluminum is not a regulated facility. The facility possesses three permits: an IEPA construction permit for modifications to SWMU 1 (permit No. 91060105), issued September 17, 1991 (IEPA, 1991a); a Cook County Department of Environmental Control (CCDEC) permit for SWMU 1 (permit No. 77829), issued December 4, 1991 (CCDEC, 1991); and an IEPA operating air permit for SWMU 1 and the furnaces (permit No. 89090068) issued November 4, 1991 which expires November 28, 1994 (IEPA, 1991b).

TABLE 1 SOLID WASTE MANAGEMENT UNITS

SWMI Number		RCRA Hazardous Waste Management Unit ^a	Status
1	Baghouse Dust Agglomerator	Yes	RCRA closed in 1984, shutdown from 1987 to 1991, restarted in 1991 and is currently used for nonhazardous waste which is stored for less than 90 days.
Note:			
a	A RCRA hazardous waste manage submittal of a RCRA Part A or Pa	ment unit is one that currently requir rt B permit application.	es or formerly required

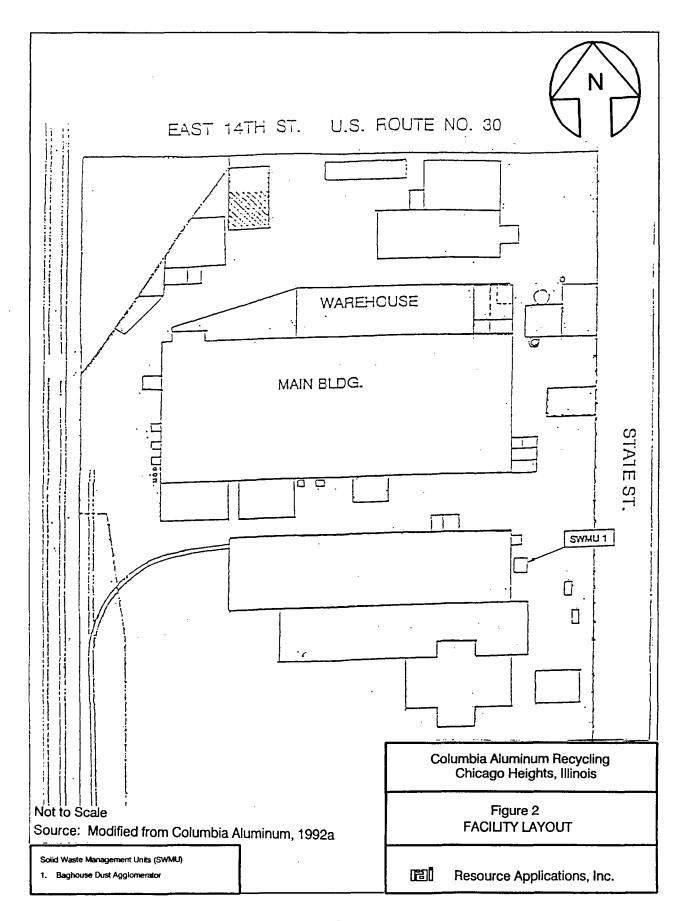


TABLE 2 SOLID WASTES

Waste/EPA Waste Code ^a	Source	Solid Waste Management Unit
Columbia Aluminum Baghouse Dust/NA	Recycling furnaces	SWMU 1
Columbia Aluminum Slag/NA	Recycling furnaces	Removed directly from main building to off-site landfill
Columbia Tool Baghouse Dust/K061	Electric furnaces	SWMU 1
Notes:		
a Not applicable (NA) designates not	nhazardous waste.	

There have been no recorded permit violations, no odor complaints from area residents, and the facility is not required to have a National Pollutant Discharge Elimination System permit. No CERCLA activity has been performed at this facility.

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

2.6.1 Climate

The climate in Cook County is predominantly continental with frequent short period fluctuations in temperature, humidity, cloudiness, and wind direction (Ruffner, 1985). The average daily temperature is 51.4 degrees Fahrenheit (°F). The lowest average daily temperature is 20.3°F in January. The highest average daily temperature is 81.0°F in July (NOAA, 1990).

The total annual precipitation for the county is 33.34 inches. The mean annual lake evaporation for the area is about 30 inches. The 1-year, 24-hour maximum rainfall is 6.24 inches (NOAA, 1990).

The prevailing wind is west-southwest. Average wind speed is highest in April at 12 miles per hour (NOAA, 1990).

The continental weather of Cook County is partially modified by Lake Michigan. During the warm season there is frequently a cool lake breeze which reduces daytime temperatures near the shore by up to 10 degrees. In late autumn and winter, cold air masses reaching land are tempered by passage over the lake (NOAA, 1990).

2.6.2 Flood Plain and Surface Water

For flood classification purposes the facility is located in Zone C, outside the 500-year flood plain (FEMA, 1979).

The nearest surface water body, Third Creek, is located about 0.5 mile northeast of the facility and is used for drainage purposes. Third Creek merges with Thorn Creek approximately 2 miles north of the facility. About 8 miles north, Thorn Creek joins the Little Calumet River which empties into Lake Michigan.

All building and site runoff on the level site is directed by surface drains and an underbuilding drainage system to the Thorn Creek Basin Sanitary Sewer District line, adjacent to the property.

2.6.3 Geology and Soils

No site-specific information was available, thus, regional geological information is presented here. Soils in the Chicago vicinity have developed through the weathering of underlying glacial deposits over the past 13,500 years. The Columbia Aluminum facility exists in an area underlain by approximately 100 feet of glacial drift (Bergstrom and Piskin, 1975). The glacial deposits in the area are mainly till, which consists of pebbles, cobbles, and other coarse rock fragments set in a clay or silt matrix. Within the till are small lenses of outwash deposits, which are sands and gravels deposited by meltwater streams (Lineback and Willman, 1970).

The uppermost bedrock beneath the facility is dolomite and limestone of Silurian age, part of the Niagaran-Alexandrian series. These units are approximately 400 feet thick, and are underlain by 300 feet of Ordovician Maquoka gray-brown shale which contains some thin layers of limestone and dolomite. Galena-Platteville dolomite and limestone underlies the Maquoketa shale, and is about 200 feet thick. Beneath these rocks lie, with increasing depth, the Glenwood-St. Peter sandstones (about 100 feet thick), the Prairie du Chien, Trempeleau, and Franconia sandy dolomites (which straddle the Cambrian-Ordovician boundary and are about 400 feet thick), and the deepest significant aquifer, the Ironton-Galesville sandstone (about 175 feet thick). Beneath these deposits are the Eau Claire and Mount Simon shales, siltstones, and sandstones underlain by Precambrian basement (Suter, et al., 1959).

2.6.4 Ground Water

Ground water in northeast Illinois exists in four major aquifer systems. The systems are, in order of descending depth: the glacial drift system, the shallow bedrock system, the Cambrian-Ordovician system, and the Mt. Simon system (Willman, 1971).

In the shallow unconsolidated deposits of the glacial drift system, lateral flow is generally dependent on the local topography which has been modified by urban development. Ground water flow is generally towards the nearest surface water body (Cravens and Zahr, 1990). Near Columbia Aluminum, the ground water flows northeast.

The shallow bedrock system consists mainly of Silurian dolomite. Movement within the Silurian dolomite occurs in joints, fissures, solution cavities, and bedding plane openings. Regional ground water movement within the Silurian system of northeastern Illinois tends to be from the northwest towards the southeast (Cravens and Zahr, 1990).

The deep bed aquifer systems, comprised mainly of sandstones and dolomites, include the Cambrian-Ordovician and Mt. Simon aquifer systems. The major aquifers in the deep systems are the Glenwood-St. Peter, Ironton-Galesville (both part of the Cambrian-Ordovician system), and Mt. Simon Sandstones (Hughes, et al., 1966). Recharge to the Cambrian-Ordovician system occurs in areas of outcrop, shallow cover by glacial drift, and from leakage downward through the shallow bedrock system. Recharge to the Mt. Simon aquifer occurs from an outcrop region located in central southern Wisconsin (Willman, 1971).

The communities surrounding Columbia Aluminum receive their water supply from Lake Michigan. No information was available on industrial ground water wells.

2.7 RECEPTORS

The facility occupies 8.45 acres in a mixed-use area in Chicago Heights, Illinois. Chicago Heights has a population of about 33,000 (Illinois Department of Commerce and Community Affairs (IDCCA), 1991).

The facility is bordered on the north, east, and south by commercial and industrial businesses, and on the west by a railroad right-of-way and a light commercial and residential mixed area. The nearest school, St. Joseph's Elementary, is located about 0.75 mile west of the facility.

Facility access is controlled by continuous 15-foot barbed-wire fencing, and a guard house located at the entrance gate.

The nearest surface water body, Third Creek, is located 0.5 mile northeast of the facility and is used for drainage purposes. Drinking water is obtained from the municipal water supply system which draws from Lake Michigan (IDCCA, 1991).

Ground water is not used as a private water supply. There are no drinking water wells in the vicinity of the facility.

Sensitive environments are located within the vicinity of the facility. The facility is surrounded by municipal forest preserves approximately 1.5 miles to the north, west, and southwest.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the one SWMU identified during the PA/VSI. The following information is presented for the SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and RAI's observations. Figure 2 shows the SWMU location.

Unit Description: The Baghouse Dust Agglomerator is located outdoors on the east side

of the former melt shop building. The metal unit is a Wheelabrator 4 module, negative pressure, two compartment bag type dust collector. The theoretical capacity of 130,000 cubic feet per minute (cfm) is accomplished by twin 65,000 cfm blowers (see Photograph No. 1).

Date of Startup: This unit began operation under Columbia Tool on December 31,

1973. From 1987 to 1991 the facility was inactive. The unit began

operation again in 1991 under Columbia Aluminum.

Date of Closure: The unit was RCRA closed in 1984, and shutdown in 1987. In 1991

the unit was started under Columbia Aluminum. The unit is currently

active.

Wastes Managed: This unit currently manages a nonhazardous dust. It formerly

managed a hazardous dust (K061) from 1973 to 1987.

Release Controls: The dust is blown directly into covered storage containers through

flexible tubing, preventing human contact and release to the

environment.

History of

Documented Releases: No releases from this unit have been documented.

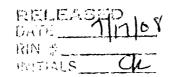
Observations:

One 7- to 10-cubic-yard roll-off box was full, and another was being filled during the VSI. RAI noted no evidence of release.

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4.0 AREAS OF CONCERN

No AOCs were identified during the PA/VSI, and there is no history of documented release at this facility.	ses



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5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified one SWMU and no AOCs at the Columbia Aluminum facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. Following are RAI's conclusions and recommendations for the SWMU. Table 3, at the end of this section, summarizes the SWMU at the facility and the recommended further actions.

SWMU 1

Baghouse Dust Agglomerator

Conclusions:

The potential for release to ground water, surface water, air, and on-site soils is low. The unit, currently operated by Columbia Aluminum, manages a nonhazardous waste which is blown directly into covered storage containers and emptied two to three times per week. From 1987 to 1991 the unit did not operate. From 1973 to 1987, the facility was operated by Columbia Tool and the unit managed a hazardous, high-chromium content dust (K061). No history of releases exists for the life of this unit.

Recommendations:

RAI recommends no further action for this SWMU at this time.



TABLE 3 SWMU SUMMARY



SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
Baghouse Dust Agglomerator	1973 to 1987; 1991 to present	None	None

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ATTACHMENT A VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

Columbia Aluminum Recycling, Ltd. 400 E. Lincoln Hwy. Chicago Heights, Illinois 60411 ILD 005 144 233

Date: June 15, 1992

Primary Facility Representative: Jim Dillon, Columbia Aluminum Recycling Ltd., Vice-

President

Representative Telephone No.: (708) 758-8888

Additional Facility Representatives: Larry Lipa, Plant Manager

Inspection Team: Catherine F. Tolley, Resource Applications, Inc. (RAI)

Laura Czajkowski, RAI

Photographer: C. Tolley, RAI

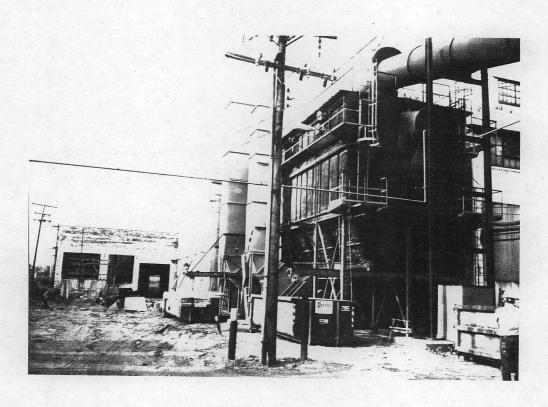
Weather Conditions: Partly sunny, temperature about 68°F

Summary of Activities: The visual site inspection (VSI) began at 8:30 a.m. with an

introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. The facility representative then discussed the facility's current operations, solid wastes generated, and release history. The facility representative provided the inspection team with copies of requested documents. However, the representative could provide no information about past operations at the facility.

The VSI tour began at 9:30 a.m., and consisted of viewing the Baghouse Dust Agglomerator (SWMU 1), walking through the main building, and briefly touring the remainder of the facility. SWMU 1, located outside on flat ground on the east side of the former melt shop building, was in operation. A photoionization detector (PID) was used during the VSI and found no detectable volatile hydrocarbons.

The tour concluded at 11:00 a.m., after which the inspection team held an exit meeting with the facility representative. The VSI was completed and the inspection team left the facility at noon.



Photograph No. 1 Orientation: North

Description: Baghouse Dust Agglomerator

Location: SWMU 1 Date: June 15, 1992

ATTACHMENT B VISUAL SITE INSPECTION FIELD NOTES

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